ATTACHMENT J27

Ellington ANGB Electric Distribution System

Table of Contents

List of Tables

J27 Ellington Field ANGB Electric Distribution System

J27.1 Ellington Field ANGB Overview

Ellington Field ANGB is located 17 miles southeast of the City of Houston in Harris County, Texas, adjacent to a joint civil / military airport, called Ellington Field, that is operated by the City of Houston Department of Aviation. Ellington Field was deactivated by the Air Force in 1976, and the City of Houston acquired the property in 1984 excluding the 213 acres belonging to the ANGB. Ellington Field ANGB is owned and operated by the USAF with the primary tenant the 147th Fighter Wing (FW) Texas Air National Guard (TXANG), which is under the operational control of the Commander in Chief, North American Aerospace Defense Command (CINCNORAD). The 147th FW is a general purpose Fighter Wing responsible for the overall command, direction, planning, and management of subordinate squadrons that provide air defense of the southeastern and southwestern sectors of the United States. Other tenant organizations located on Ellington Field ANGB are the Texas Army National Guard (TXARNG), and the Federal Aviation Administration (FAA). Other major tenants at the City of Houston owned Ellington Field includes:

- U.S. Coast Guard (USCG)
- National Aeronautics and Space Agency (NASA)
- City of Houston
- Continental Express
- United Parcel Service (UPS)

Ellington Field occupies an area of 1,869 acres with the ANGB occupying approximately 209 acres on the western side of the installation and two smaller sections containing the Base Fire Station and POL Storage Area totaling approximately 4 acres – making a combined total of approximately 213 acres. Ellington Field ANGB contains approximately 64 buildings with a total of over 433,000 square feet.[1] Three runways bound Ellington Field to the east. The primary runway, 17R / 35L, is 9,000 feet long and is the main runway used by the TXANG; runway 17L / 35R is 4,680 feet long and is used by smaller aircraft and helicopters; and runway 04 / 22 serves as the cross-wind runway and is 8,000 feet in length. All three runways are constructed of concrete.

The Ellington Field ANGB population is comprised mainly from the activities of the 147th FW. The 147th FW has a total population of approximately 319, including military personnel, civilian employees, and support personnel. During unit training activity (UTA) weekend, the 147th FW population increases to over 100 assigned officers and over 1,000 enlisted personnel at the facility.

[1] The structures include administrative offices, industrial maintenance and repair facilities, warehouses, petroleum storage facilities, and a fire station.

Projected future mission requirements and a steady increase in the base population have necessitated the construction of new facilities and the renovation or demolition of older facilities. The Future Development Plan for Ellington Field ANGB lists several new facilities to be constructed on the main base, including the following:

- A communications facility and Supply/Logistics complex, west of the existing hangar.
- A BCE complex and HQ complex south of the existing medical training and dining facility.
- An Aircraft Support Equipment (ASE) Complex west of the fuel systems maintenance dock.

To estimate the percentage by which the Base planned to expand or contract, a short-range plan over the next five years was studied. For the short term, an estimated 100,270 square feet of construction is planned. However, an estimated 51,014 square feet of demolition is also planned for this same time period, leaving a net construction square footage of 49,256 square feet. Comparing this net construction value to the Base's current building square footage of 433,902 from the inventory list, an 11 percent growth is anticipated for Ellington Field ANGB.

J27.2 Electric Distribution System Description

J27.2.1 Electric Distribution System Fixed Equipment Inventory

The Ellington Field ANGB electric distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system enters the Installation and Government ownership currently starts to the point of demarcation, defined by the Right of Way. The system may include, but is not limited to, transformers, circuits, protective devices, utility poles, ductbanks, switches, lighting on poles (street, parking, security, and ball field), and other ancillary fixed equipment. Lighting on poles includes the footings, pole, fixtures, sensors, and electric cable from point of demarcation defined in the Right of Way. The actual inventory of items sold will be established in the Bill of Sale at the time the system is transferred. The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service charge adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the electric distribution system privatization are:

- Airfield lighting, airfield vaults, and all associated equipment
- Parking lot and security lights that are fed directly from buildings
- All secured area lighting

J27.2.1.1 Description

Electric power is supplied to Ellington Field ANGB through one 12.47-kilovolt (kV) distribution line. Base ownership starts after the metering. The Base-owned assets have a manual three-phase disconnect switch for system isolation.

The distribution system consists of three-phase, four-wire line rated at 15 kV; the overhead portion currently total approximately 18,000 linear feet (lf) and the underground portions (in conduit) total approximately 8,000 lf.

The distribution system is configured as a radial feed. The positioning of switches throughout the distribution system provides isolation from one section to another to minimize the impact of maintenance outages.

Construction dates for the underground and overhead circuits, and other system components, range from the mid-1970s to the 1990s. Approximately half of the poles on Base were replaced in conjunction with an improvement project.

J27.2.1.2 Inventory

Table 1 provides a general listing of the major electric distribution system fixed assets for the Ellington Field ANGB electric distribution system included in the sale.

TABLE-1
Fixed Inventory
Electric Distribution System, Ellington Field ANGB

Item	Size	Quantity	Unit	Approximate Year of Construction
Substations				
Distribution		1	EA	1985
Underground Circuits	AWG	Length (ft)		
3ph, 4w, 480V, in conduit	#2/0	3,900	LF	1995
3ph, 4w, 15000V, in conduit	#250	4,200	LF	1995
Overhead Circuits				
3ph, 4w, 15000V, conductor	#2/0 CU	6350	LF	1985
3ph, 4w, 15000V, conductor	#2 CU	4300	LF	1975
3ph, 4w, 15000V, conductor	#2/0 CU	7000	LF	1975
Transformers	Nom kVA	No.		
3-phase	112.5	1	EA	1995
3-phase	150	2	EA	1995
3-phase	225	4	EA	1995
3-phase	500	2	EA	1995
3-phase	750	1	EA	1995
3-phase	750	1	EA	1985
1-phase	50	3	EA	1995
1-phase	5	1	EA	1975
1-phase	15	12	EA	1975
1-phase	25	9	EA	1975
1-phase	37.5	10	EA	1975
1-phase	50	5	EA	1975
1-phase	75	4	EA	1975

Item	Size	Quantity	Unit	Approximate Year of Construction
1-phase	100	15	EA	1975
1-phase	167	3	EA	1975
Utility Poles	**Height (ft)**	**No.**		
	45	53	EA	1985
	45	53	EA	1975
Switches	**Type**	**No.**		
	2-Way	3	EA	1985
Lighting	**Type**	**No.**		
	Street	70	EA	1985

NOTES:
AWG = American Wire Gauge
LF = Liner Feet
PH = Phase
W = Wire
EA = Each
Nom kVA = Nominal kilovolt-amperes
V = Volts

J27.2.2 Electric Distribution System Non-Fixed Equipment and Specialized Tools

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the sale. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2
Spare Parts
Electric Distribution System, Ellington Field ANGB

Qty	Item	Make/Model	Description	Remarks
	No spare parts are included in the privatization of this utility system.			

TABLE 3
Specialized Vehicles and Tools
Electric Distribution System, Ellington Field ANGB

Description	Quantity	Location	Maker
No specialized vehicles and tools are included in the privatization of this utility system.			

J27.2.3 Electric Distribution System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Electric Distribution System, Ellington Field ANGB

Qty	Item	Description	Remarks
1	CD	Utility System Drawings	Electric Distribution System
1	Record Drawings	Copies of all record drawings shall be made available onsite to Contractor as requested	Drawings will be available during normal duty hours.

J27.3 Specific Service Requirements

The service requirements for the Ellington Field ANGB electric distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the Ellington Field ANGB electric distribution system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C.

- In accordance with paragraph C.5.1.3, *Contractor Facilities*, all new and renewal electric utility services shall be placed underground unless otherwise agreed to by both parties.
- The Contractor shall coordinate with the Base Civil Engineer or equivalent agency as designated by the contracting officer any changes to street lights, security lights, obstruction lights, or other lights that may affect blackout procedures during Government operations.
- The Contractor shall enter into a Memorandum of Understanding with the Ellington Field Air National Guard Base Fire Department for fire protection of all facilities included in the purchase of the utility. The Contractor shall abide by Ellington Field ANGB fire protection requirements. The Contractor shall maintain the fire alarm system for all facilities included in the purchase of the utility. The Contractor shall permit Fire Department personnel access to their facilities to perform fire inspections and emergency response.
- IAW Paragraph C.9.8, *Exercises and Crisis Situations Requiring Utility Support*, the Contractor shall provide support as directed by the Ellington Field Air National Guard Base Civil Engineer Control Center or equivalent agency as designated by the contracting officer for exercises and crisis situations.
- The Contractor shall provide monthly meter reading reports IAW Paragraph J27.6, and that meet the following requirements:

  The Contractor shall keep a meter books with monthly consumption and demand (if applicable) for each meter readings. Meter books shall also include building address or facility number, meter number, previous month readings, current month readings, multipliers for each meter, total monthly consumption, points of contact for meter questions, and procedure for converting meter reads into consumption (including multipliers). The Government may provide a format in a Microsoft Excel files to be used for meter readings.
- For all privatized lighting fixtures, operations and maintenance of lighting fixtures includes the purchase and replacement of the lighting element and the removal and disposal of replaced lighting element.

J27.4 Current Service Arrangement

Currently Reliant Energy HL&P (formerly Houston Lighting & Power Company) supplies power to Ellington Field ANGB through one 12.47-kilovolt (kV) distribution line. Base

ownership starts after the metering. Current electric power annual consumption at Ellington Field ANGB is approximately 9.7 million kWh. The peak demand for FY98 was approximately 2.0 megawatts (MW), occurring in the month of August.

As noted in Section J27.1, key projects planned for Ellington Field ANGB may increase the total square footage of buildings on Base by about 11 percent.

J27.5 Secondary Metering

The Installation may require secondary meters for internal billings of their reimbursable customers, utility usage management, and energy conservation monitoring. The Contractor shall assume full ownership and responsibility for existing and future secondary meters IAW Paragraph C.3.

J27.5.1 Existing Secondary Meters

Table 5 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the Contractor. The Contractor shall provide meter readings once a month for all secondary meters IAW Paragraph C.3 and J27.6 below.

TABLE 5
Existing Secondary Meters
Electric Distribution System, Ellington Field ANGB

Building	Building Description	Meter No.
1181	Army Vehicle Maintenance Shop	
1182	Army Vehicle Administration	
1183	Army Hanger	
1178	Coast Guard Complex Coast Guard	
1260	FAA Complex	

J27.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3 and J27.6 below.

TABLE 6
New Secondary Meters
Electric Distribution System, Ellington Field ANGB

Meter Location	Meter Description
1260 FAA Complex	Replace existing meter

J27.6 Submittals

The Contractor shall provide the Government submittals for the following:

1. Invoice (IAW G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be

submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

Name:
Address:
Phone number:

2. Outage Report. The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall include the following information for Scheduled and Unscheduled outages:

   Scheduled: Requestor, date, time, duration, facilities affected, feedback provided during outage, outage notification form number, and digging clearance number.

   Unscheduled: Include date, time and duration, facilities affected, response time after notification, completion times, feedback provided at time of outage, specific item failure, probability of future failure, long term fix, and emergency digging clearance number.

   Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

   Name:
   Address:
   Phone number:

3. Meter Reading Report. The monthly meter reading report shall show the current and previous month readings for all secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

   Name:
   Address:
   Phone number:

4. System Efficiency Report. The Contractor shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer. The Contracting Officer will determine the frequency of the report based on Government requirements. System efficiency reports shall be submitted to:

   Name:
   Address:
   Phone number:

J27.7 Energy Saving Projects

IAW Paragraph C.3, Requirement, the following projects have been implemented on the distribution system by the Government for energy conservation purposes.

- None

J27.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Ellington Field ANGB boundaries.

J27.9 Off-Installation Sites

No off-installation sites are included in the sale of the Ellington Field ANGB electric distribution system.

J27.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 7** provides a listing of service connections and disconnections required upon transfer.

TABLE 7
Service Connections and Disconnections
Electric Distribution System, Ellington Field ANGB

Location	Description
	The Government does not require any connection or disconnections during the transition period.

J27.11 Government Recognized System Deficiencies

Table 8 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Ellington ANGB electric distribution system. If the elective distribution system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AB.

TABLE 8
System Deficiencies
Electric Distribution System, Ellington Field ANGB

Project Identifier/Location	Project Description
	Replace the overhead secondary service in the vicinity of Building 1255 with a new primary circuit and transformer.